


INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/32322

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : B29C 53/56, 53/62 US CL : 264/151, 288, 292, 294, 295 According to International Patent Classification (IPC) or to both national classification and IPC																							
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 264/151, 288, 292, 294, 295 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)																							
C. DOCUMENTS CONSIDERED TO BE RELEVANT <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Category *</th> <th style="width: 70%;">Citation of document, with indication, where appropriate, of the relevant passages</th> <th style="width: 20%;">Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Y</td> <td>US 2,432,870 A (EVALT) 16 December 1947 (16.12.1947), column 2, lines 1-9.</td> <td style="text-align: center;">1-12, 14</td> </tr> <tr> <td style="text-align: center;">Y</td> <td>US 2,740,987 A (MONCRIEFF) 10 April 1956 (10.04.1956), column 1, lines 15-22, 29-35; column 2, lines 23-26; column 3, lines 1-7, 50-55.</td> <td style="text-align: center;">1-12, 14</td> </tr> <tr> <td style="text-align: center;">Y</td> <td>US 3,184,795 A (HOWELL, JR.) 25 May 1965 (25.05.1965), column 6, lines 29-41.</td> <td style="text-align: center;">8, 11</td> </tr> <tr> <td style="text-align: center;">Y</td> <td>US 2,392,842 A (DOELL) 15 January 1946 (15.01.1946), column 4, lines 13-14.</td> <td style="text-align: center;">3, 9</td> </tr> <tr> <td style="text-align: center;">Y</td> <td>US 5,167,891 A (DIKMAN, SR. et al) 1 December 1992 (01.12.1992), column 3, lines 40-45; column 4, lines 47-56.</td> <td style="text-align: center;">12, 14</td> </tr> <tr> <td style="text-align: center;">A</td> <td>US 3,431,337 A (HEIMBURGER) 4 March 1969 (04.03.1969)</td> <td style="text-align: center;">1-14</td> </tr> </tbody> </table>			Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	Y	US 2,432,870 A (EVALT) 16 December 1947 (16.12.1947), column 2, lines 1-9.	1-12, 14	Y	US 2,740,987 A (MONCRIEFF) 10 April 1956 (10.04.1956), column 1, lines 15-22, 29-35; column 2, lines 23-26; column 3, lines 1-7, 50-55.	1-12, 14	Y	US 3,184,795 A (HOWELL, JR.) 25 May 1965 (25.05.1965), column 6, lines 29-41.	8, 11	Y	US 2,392,842 A (DOELL) 15 January 1946 (15.01.1946), column 4, lines 13-14.	3, 9	Y	US 5,167,891 A (DIKMAN, SR. et al) 1 December 1992 (01.12.1992), column 3, lines 40-45; column 4, lines 47-56.	12, 14	A	US 3,431,337 A (HEIMBURGER) 4 March 1969 (04.03.1969)	1-14
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<div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Further documents are listed in the continuation of Box C. </div> <div> <input type="checkbox"/> See patent family annex. </div> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 45%;">* Special categories of cited documents:</th> <th style="width: 55%;">Symbol</th> </tr> </thead> <tbody> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</td> </tr> <tr> <td>"E" earlier application or patent published on or after the international filing date</td> <td>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</td> </tr> <tr> <td>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td> <td>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td>"&" document member of the same patent family</td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </tbody> </table>			* Special categories of cited documents:	Symbol	"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	"P" document published prior to the international filing date but later than the priority date claimed										
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Date of the actual completion of the international search 28 December 2004 (28.12.2004)		Date of mailing of the international search report <div style="font-size: 1.2em; font-weight: bold;">14 JAN 2005</div>																					
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230		Authorized officer Mike Colaanni  Telephone No. 571-272-1700																					